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Fairmount Park.

FAIRMOUNT PARK in Philadelphia illustrates two things: the importance of careful preliminary studies of the ground on the part of a landscape-gardener of experience and training before an urban park is located, and the necessity of devising some better method than now exists for the permanent management of parks in American cities.

Fairmount Park is one of the largest urban pleasure-grounds in the world. The site along the banks of the Schuylkill River is in itself beautiful; the surface is undulating and diversified, the soil is excellent, and there is no American park, with the exception, perhaps, of Druid Hill Park in Baltimore, which can show such noble trees—some natural, especially Tulip-trees and White Oaks, and some planted, for several fine old country places were embraced in the park. The drive along the Schuylkill in the East Park is certainly in itself, in spite of many disfigurements, one of the noblest pleasure drives in existence, while the narrow gorges of the Wissahickon supply much that is charmingly natural and delightful. But Fairmount Park, in spite of its great size and of all these natural advantages, cannot be considered successful, either from a practical or from an artistic point of view; and no trace of a master mind can be found in its location or in its treatment. Much of its value to the people of Philadelphia is lost, because of its remoteness and difficulty of access from the centre of population; and the inadequacy and inconvenience of all the park approaches are serious injuries to the appearance of the city and a real drawback to the proper enjoyment of the park. The great drive in the East Park is reached through a narrow and rather obscure street filled with the tracks of a surface road, the immediate entrance to the drive itself being through the narrow arches of a railroad bridge. Railroad lines skirt the park in all directions. One of the main drives from the West Park to the Schuylkill plunges down a steep hill to a railroad grade-crossing of the most dangerous character, while the entrance to the beautiful Wissahickon drive is under a railroad bridge. Railroad tracks separate the West Park from the banks of the river, which is crossed by a railroad bridge within the park limits.

Had the people of Philadelphia when the spirit first moved them to possess a park called upon some man of experience and ability to advise them about its location and to propose a scheme of approaches and a system under which extensions of the city should be built, it is safe to say that they would have had a much more convenient and satisfactory park than they have at present; and that the cost of the advice would have been saved many hundred times over. The greatest landscape-gardener might not have succeeded in overcoming all the railroad difficulties in the situation, but it is safe to say that a man of adequate experience in the treatment of such problems could have brought the park into closer and more satisfactory relations with the centre of population than now exist and thus increased its value and usefulness. The mistake of not taking proper advice in the location of the park lands was repeated when it came to construction; and much of the work done within the park is not of a character to develop all its great natural beauties.

But Fairmount Park as it is now located cannot be changed, and it is not probable that the general scheme long ago adopted for laying it out will ever be greatly modified. Of the past history of the park, except as a warning to other cities, it is therefore less important to speak than of its present and future condition. The most casual examination shows that Fairmount Park is in a miserable and alarming condition. The roads are neglected and often badly gullied; the grass is totally uncared for, uncut, filled with weeds, and often killed out over considerable areas. The young plantations are choked with weeds and apparently abandoned to their fate. Old trees are perishing through neglect. The pretentious gardens in the neighborhood of Horticultural Hall show what a few years of neglect can accomplish, and how much out of place such gardens are in public grounds. Horticultural Hall itself, which contains some of the largest tropical plants which can be seen in the United States, would delight the enterprising and curious entomologist more than it can the lover of plants.

The condition of Fairmount Park shows what effect unrestricted political influence must have upon an organization requiring such careful, intelligent and sustained management as a great city park of rural character. It is merely a question of time, unless the management of city parks can be divorced from politics, when all their rural character and real value will be destroyed. The politicians have their grasp already firmly fixed upon Prospect Park in Brooklyn, and it is hoping beyond hope to believe that it can be rescued from their clutches. The Central Park in this city has been saved because there happens to be two or three men able to realize what the park is, and what its value to the community consists in, who have sufficient public spirit and sufficient ability to enforce their views upon the public. But new dangers threaten Central Park from all sides, and nothing but extreme vigilance can ward off the attacks of selfish and unscrupulous men.

There is, however, a ray of light in the east, when Mayor Hart's gallant and successful fight to take the Boston Park Commission out of politics and to place it in the hands of experienced men of affairs, brings hope to all interested in the development of the new park system. But even in Boston this change for the better cannot be permanent under existing political methods, and there can be no improvement in the management of American urban parks until they are placed under the control of bodies of men who are not dependent upon political patronage or political influence for their appointments, and who will manage this trust in the interests of the public, and not for the advancement of one or of the other political party. Fairmount Park is a lamentable spectacle, but it may be made to point a moral, and to illustrate the dangers of political influence in the management of parks.

Heinrich Gustav Reichenbach, for twenty-six years Professor of Botany and Director of the Botanic Garden at Hamburg, and the most learned orchidographer, is dead in his sixty-seventh year. It was as a student of Orchids that Professor Reichenbach was best known to the present generation of botanists and horticulturists; his earliest labors, however, were devoted to general botany; and he did good service in assisting his father in the preparation of his now classical "Icones Floræ Germaniæ et Helvetiæ," drawing with his own hand no less than 1,500 of the plates, and editing the final volumes after the death of the elder Reichenbach. The first of these devoted to Orchids was published in 1851—the result of ten years study of the family—and was his first important work upon the subject. He contributed the Orchids to Walpers' "Annales;" and in the "Xenia Orchidacea," a work which has appeared irregularly in parts since 1851, nearly a thousand figures of Orchids from his pencil have been published.

On the death of Lindley, in 1865, Professor Reichenbach became the recognized authority on Orchids, and his time has ever since been occupied in determining and naming the immense numbers of new species which have poured in upon him from all sources, and from all parts of the world. He was overwhelmed with material which he was never able to reduce to systematic order and make really available. His knowledge of details was enormous, but his mind was hardly a logical one in the broadest sense, and lacked precision and the power of grasping clearly the material at his disposal. Knowing Orchids as no one has ever known them, he never produced the systematic synopsis even of the genera and species which the world expected from him. But if the crowning work was left unfinished by Reichenbach, his labors have made its accomplishment by his successors possible, if not easy.

He realized fully the value of the garden collections of Orchids in their influence upon his studies, and there has not been a prominent grower in Europe of these plants during the last forty years whom Professor Reichenbach has not aided with sound information and friendly counsel. His sympathies and interests were broad as the surface of the globe; and not long ago we received a number of letters from him deploring the excessive importation of our hardy Orchids and other delicate herbaceous plants into Europe, and urging us to cry a halt upon this wanton and unnecessary destruction, which he felt could only end in utterly eradicating some of the most charming plants of the American flora.

It is not evident upon whom the Orchid mantle transmitted by Lindley to Reichenbach will now descend, or who there is that can take up the tangled web which has fallen from the hands of our learned and kind old friend.

Recent Botanical Discoveries in China.—III.

Gymnocladus Chinensis.—Easily distinguished from the North American species by its smaller, oblong and more numerous leaflets and much thicker pod. It is the Soap-tree of China, the beans of which are used by the Chinese women to wash their hair. Described as a very handsome tree, growing in the provinces of Anwhei, Chekiang, Kiangsi and Hupeh; figured in Hooker's *Icones Plantarum*, *t.* 1412. It is in cultivation, I believe, in England and France.

Viola.—Violets abound in China, though recent collections have no new, specially ornamental species. *V. Websteri* is a very distinct plant with long, unbranched stems, furnished in the lower part with membranous sheaths in the place of leaves, and those on the upper part of the stems are long and narrow. The flowers are small.

Impatiens.—Several new species of this genus have been discovered, and, as far as one can judge from dried specimens, some of them are very pretty, notably *I. tubulosa*, described in the "Index," i., p. 102. Since the description was drawn up much better specimens have been received from Dr. Henry.

Psilopeganum Sinense.—An interesting new genus of the *Rutaceæ* allied to Bœnninghausenia and the American genus Thamnosma, figured in the "Index," i., *t.* 3, p. 103. It is a dwarf, herbaceous plant, with numerous, slender stems springing from a common stock, trifoliolate leaves, and small yellow flowers arranged singly nearly opposite the leaves; mentioned here on account of its botanical features, though horticulturists no longer concentrate all their care and thoughts on showy subjects.

Xanthoxylum.—About fifteen species of this genus are now known to inhabit China, and some of the northern ones are certainly worthy of the attention of persons desirous of cultivating variety in shrubs. There are four or five from the extreme north, and *X. dissitum* from the neighborhood of Ichang, is a handsome shrub, or small tree, with ample pinnate leaves.

Kœlreuteria bipinnata.—Described as a very ornamental tree, from the hills near Ning-Po. It is figured and described in the *Revue Horticole*, 1888, p. 393. In foliage it is more like Ailantus than that of the old *K. paniculata*, that is to say, in the shape and size of the separate leaflets. Judging from dried specimens, the flowers are very similar. This tree is in cultivation in Europe. In the Kew Herbarium are specimens from Kwangtung of what appears to be a third species of this genus, with foliage almost exactly like that of a Gleditschia.

Mucuna (§ *Stizolobium*) *sempervirens.*—This is a new shrubby evergreen climber or trailer, producing branches of enormous length, like *Wistaria Sinensis;* but it is doubtful whether it would bear the same amount of cold. *Wistaria Sinensis* ranges from the mountains near Peking to Ning-Po, and Kinkiang and Ichang, if not even further south. Indeed there is a specimen in the Kew Herbarium from Hong Kong, collected by Wright, though without any indication of its origin, whether wild or cultivated. When this beautiful shrub was introduced into England, about the year 1816, it was nearly killed by being placed in a hot-house. At the same time *Rhynchospermum*, or *Trachelospermum jasminoides*, will flourish in a hot-house and flower abundantly, and almost equally as well out-of-doors in the south-west of England. Of this I have seen specimens from the hills near Shanghai, as well as from Formosa and Hong Kong and Ichang, and Maximowicz reports it from the north-west provinces of Shensi and Kansuh. Therefore, *Mucuna sempervirens* may prove hardy in the south and west of England and in similar climates. Respecting the climate of Ichang, Dr. Henry says that it is considerably milder than that of Shanghai, especially in the winter, and that very good Oranges are grown there. As there is not more than a degree of difference in the latitudes of the two places, one would have supposed the contrary to be the case, Shanghai being on the coast and Ichang between four or five hundred miles inland. Dr. Henry describes the flowers as very large, purplish and somewhat fleshy, but when I described the plant, we had only quite young flower-buds, though flowers from Ning-Po were suspected to belong to this species. This point has not yet been settled, and later consignments by Dr. Henry are not accessible at the present moment. On the other hand, M. Franchet, who is elaborating the magnificent collections made by the Abbé Delavay, sends to Kew, flowers from the much more elevated region of Yun-Nan, which he identifies with *Mucuna sempervirens*, after having seen authentic fruiting specimens. These flowers are not more than half the size of those alluded to above from Ning-Po, which are two and a half to three inches long, and certainly do not belong to the same species; yet, the Yun-Nan flowers may belong to *M. sempervirens*, and their relatively small size be due to a colder climate. It seems unlikely that Dr. Henry would have described the Yun-Nan flower as very large. Be that as it may, there is a living, flourishing plant at Kew, and we may not have long to wait for fresh flowers. Dr. Henry writes to the effect that the creeper from which specimens were taken occurs on the banks of the Yangtse, and is remarkable for its size and beauty. It extends along the face of the bank, and is supported by trees and rocks. The diameter of the main stem is sometimes as much as a foot. The flowers are succeeded by pods a foot long constricted between the seeds.

Gleditschia.—Further material is still required for the exact delineation of the Chinese species of this genus. One thing is clear, the Hong Kong species, formerly associated with *G. Chinensis*, is quite distinct, and has been described and figured under the name of *G. australis*. It is remarkably different in the pod, which is sessile, relatively short, more or less curved, very much compressed, except where distended by the seeds, thus having a bullate appearance. *G. Chinensis* and *G. macracantha* are apparently distinct species. The latter differs from the former, not only in its larger spines and larger leaflets, but also in having a very hairy ovary, and a long, straight, flat, nearly sessile pod, containing nearly quadrate, flat seeds, about a third of an inch long. Only cultivated specimens of *G.*

macracantha are known, and of these there are some in the Kew Herbarium from Calcutta, St. Helena and European gardens. What has been taken as true *G. Sinensis* has a much longer-stalked pod, and the ovary is glabrous. The leaf characters offered by herbarium specimens afford little aid in the elucidation of the species. *G. Japonica*, as represented in our herbarium, has oblong, scarcely at all oblique leaflets, and only very young pods, so that no correct idea of the species can be formed therefrom. Both *G. Chinensis* and *G. macracantha* were founded on garden specimens, hence the confusion and difficulties that have arisen. *G. heterophylla* is a very distinct, shrubby species, from north China, having small leaflets, and a very short, thick pod. I am not aware that this is in cultivation.

Æsculus.—Until quite recently it was supposed that *Æsculus Chinensis* was in cultivation. In 1887 a young tree bore fruit in the celebrated arboretum at Segrez, and on comparison with type specimens it proved to be the Japanese *Æ. turbinata*, which is easily distinguished from the Chinese species by the much larger, fewer flowers in the clusters, and the broader leaflets of a rusty brown beneath. *Æ. turbinata* forms a small round-headed tree, hardy in the north of France and south of England. In foliage it is not unlike the common Horse-chestnut, but the leaves are borne on longer petioles and are fawn-colored on the under surface. The flowers are somewhat smaller and similarly colored, pink and white, with brown anthers. A colored figure may be seen in the Japanese *Phonzo Zoufou*, part LXII, plate 17, and the fruit is figured and described in the *Revue Horticole*, 1888, p. 496.

Kew. *W. Botting Hemsley.*

New or Little Known Plants.

The Carolina Hemlock.*

THE fact that a coniferous tree of respectable size and of considerable multiplication could escape notice for nearly a century in a region so carefully explored as the hilly portions of North and South Carolina is an example of the difficulty of learning thoroughly the trees of a country, and of the danger of being deceived about them—a danger which even the most careful and experienced observer of forests cannot always avoid. It was not suspected until 1850, when Professor L. R. Gibbes noticed the difference in the Carolina trees, that there were two very distinct species of Hemlock growing in eastern America. William Bartram, who, three-quarters of a century before, explored the very region where the second species abounds, the two Michaux, father and son, as sharp-eyed tree-lookers, or, to use the more picturesque expression of the West, "tree-sharps," as our woods have ever seen, who crossed and recrossed the region a dozen times; and, much later, Dr. M. A. Curtis, whose knowledge of the southern mountain-flora has never been equaled—all failed to notice, or, if they noticed, to record the distinct, compact habit, the darker green foliage and the larger cones, with broader spreading scales, of the Carolina Hemlock.

The Carolina Hemlock is a small tree, rarely attaining a height of more than sixty feet. It prefers the rocky banks of streams, at elevations of from 2,500 or 3,000 feet, although it is sometimes found on rocky slopes fully 1,000 feet higher. It is never gregarious, however, and it is rare to find more than half a dozen trees growing together. The two Hemlocks may be seen sometimes growing side by side with their branches intermingled, when their distinctive characteristics are made very apparent. No intermediate or connecting form has yet been noticed. The territory through which this tree is distributed is not a large one, and consists of that portion of the Blue Ridge which lies in Transylvania, Jackson and Macon Counties, North Carolina, and in the adjacent parts of South Carolina, at least as far as Cæsar's Head, an outlying spur in Greenville County, South Carolina. Our illustration upon page 269, from a photograph by Mr. E. E. Brown, of Asheville, North Carolina, gives an idea of one feature of the scenery of the Blue Ridge—the mountain torrents which pour down through deep-cut rock gorges, over rocky and precipitous beds. It represents the falls of Little River, in Transylvania County, North Carolina, and the coniferous trees seen on the banks are large and old specimens of the Carolina Hemlock. The stage road between Hendersonville, in North Carolina, and Cæsar's Head, passes by this spot, which is one of the most accessible stations of our tree. It is ten miles from "Buck Forest Hotel," once a famous hunting resort for Carolina sportsmen in the days before railroads destroyed the remoteness and much of the charm of this region, which can still boast, however, some of the finest and most rugged scenery in all eastern America, and a flora unsurpassed on the Continent in beauty and variety. *C. S. S.*

* "*Tsuga Caroliniana*, n. sp., a small tree of the southern Allegheny Mountains, with larger (six to eight lines long, three-quarters to one line wide), darker leaves than the common Hemlock Spruce, retuse or often notched at tip, without stomata above, beneath with two pale bands each with seven or eight series of stomata, strengthening cells under the epidermis or keel, mid-rib, and edges; cones twelve to fourteen lines long, scales oblong, much larger than wide, in 8-13 order, spreading at right angles at maturity, broad bracts, slightly and obtusely cuspidate; scales (two lines long) with numerous (fifteen to twenty) small oil vesicles on the under side, twice shorter than the wing." Engelmann in *Botanical Gazette*, vi., 223. —Sargent, *Report, Tenth Census, U. S.*, vol. ix., 207; *Gardeners' Chronicle*, xxvi. 780, f. 153.

Syringa Amurensis.

A FLOWER-CLUSTER of *Syringa Amurensis*, taken from a plant growing in the Arnold Arboretum, appears in our illustration upon page 271. This is the best known and most commonly cultivated of the Lilacs with white flowers, in which the tube of the corolla is short, and which belong to the section *Ligustrina*, so called from the resemblance of the flowers to those of the Ligustrum, or Privet.

Syringa Amurensis is a spreading shrub of graceful habit, growing here to a height of six or eight feet. The leaves are ovate or oblong, obtuse, or often acuminate, as on the specimen selected for our illustration, and are contracted into a long, slender petiole. The panicle of flowers is sometimes erect, and sometimes pendulous by the curving of the slender branches. It is short and compact, or more often long, one-sided, and sparsely flowered. The small creamy-white flowers are destitute of agreeable odor; they appear here from the 15th to the 20th of June.

Syringa Amurensis is a native of Manchuria, where it was discovered in 1857 by the Russian botanist, Radde. A few years later it was introduced into cultivation through the agency of the St. Petersburg garden, to which Maack sent seeds from the valleys of the Amour and the Ussuri. *Syringa Amurensis*, as might have been expected, is perfectly hardy here. It is interesting botanically as the type of a very distinct and little known form of Lilac, while as an ornamental plant it possesses considerable value.

C. S. S.

Cultural Department.

Summer Propagation of Shrubs.

MANY of our choice shrubs can be readily propagated during the summer from green-wood cuttings, at much less cost than at any other time of the year; the material is more plentiful and more easily procured, and no fire heat is required. A much longer season, too, is available, another important advantage where large quantities of plants are required. The green-house can then be used in winter for the plants of more difficult propagation. Either a green-house or frames, or both, are required, according to the number of plants to be propagated. A house forty feet long by eighteen feet wide, with two side benches three feet wide, and a centre bench six feet wide, will, under good management, be able to turn out, with the aid of frames in which to harden off the plants, many thousand of the easy rooting kinds, between June and October, after which it can be cleared out and made ready for winter work. Many kinds of material have been used by propagators to strike cuttings in, but I have found nothing better than clear, sharp sand, not too coarse, but free from clay and iron rust. Sand that has been exposed to sun and air for some time is best, but it can be used fresh from the pit, if carefully selected. The sand should be spread on the benches from two to three inches deep for any ordinary soft-wood cuttings, and at this time of the year it is not necessary to drain a bed of this slight depth, if it is carefully looked after.

The sand should be well watered and made as firm as possible with a mallet or brick. Where cuttings are put in firmly they do much the best. They should be selected from young shoots of half-grown wood, if possible, and of medium size, all over-grown suckers being avoided. Cuttings with two to three eyes, certainly not more than four, will be long enough in the case of most plants, although much larger cuttings can be used. Remove the lower leaves, and cut off smooth below an eye, being careful to have a well-sharpened knife. If the upper leaves of the cuttings are large, it is well to shorten them somewhat, to lessen the surface exposed to the air and to help prevent wilting. Soft-wood cuttings of trees or shrubs should on no account be allowed to wilt. Except in rainy weather, I invariably keep a can of water with me, and the cuttings as fast as they are collected are sprinkled and put into a close-covered box until I get to the potting-shed. When cuttings are collected at a distance, I dip each lot, as soon as cut, in water, and wrap them immediately in damp papers, keeping them away from the air as much as possible. On reaching home they are at once spread on the damp floor, sprinkled, cut in lengths and, as soon as possible, put in the bed, where they should barely touch each other, especially in summer, for when they are crowded they are more liable to attacks of fungus, the growth of which is very rapid, often going through large beds in a single night. All care should, therefore, be taken to diminish the danger from it.

As soon as the cuttings are put in they should be well watered, to settle the sand firmly around them. The roof of the house should be shaded with a slight coat of whitewash. For the first week or ten days extra shading should be given inside over the cuttings with strips of light cotton cloth or paper, hung like a curtain, so that it may be easily drawn or rolled up when not in use. The cuttings will usually need shading from nine in the morning until three o'clock in the afternoon, or even later, according to the weather and the construction of the house. If very hot weather prevails a light syringing should be given twice or three times a day, and the floors or paths of the green-house should be dampened morning, noon and night. The temperature of the house should be kept as even as possible by closing early or late, according to the weather. When cloudy all the shade should be removed, if possible, and the syringing discontinued unless the cuttings show signs of wilting, when they may have a slight sprinkling. After the first week or ten days the extra shading should be slowly dispensed with. Most of the cuttings will be well rooted at the end of a month, when they should be at once transferred to boxes or pots of light, rich, sandy earth, planted firmly, and for a few days should be shaded and syringed just as they were on the cutting bench. At the end of a week they will be somewhat established, when they may be treated as ordinary plants, in a green-house or frame, during the first season until the new growth is well ripened. The pots or boxes should be well protected from extreme weather, either in frames or deep pits; otherwise many of the plants will not endure the first winter. It is also well to remember that the soil in boxes or pots, stowed away for winter in pits, should never be sodden or wet. In the spring the plants should be shaken out of the pots or boxes and transplanted into well prepared nursery-beds, kept well cultivated, and at the end of season most of them will be fine, healthy plants. I prefer the boxes to pots, as the plants make better roots, are more easily handled, and pack away better in pit or frame. The boxes I use are made by cutting an ordinary soap box into four, using cheap half-inch spruce for the extra bottoms. The boxes usually last two seasons if housed as soon as they are out of use.

The species of plants that I have found readily propagated in this way are *Berberis Thunbergii, B. vulgaris* and its varieties, many of the Clematises, Deutzias, Akebias, Ampelopsis, Baccharis, Bignonias, Callicarpa, *Cornus sanguinea, C. stolonifera*, and other Cornels, Cottoneasters, *Eleagnus longipes*, Euonymus, Forsythias, Helianthemums, Itea, Kerrias, Ligustrums, Loniceras, Philadelphus, *Prunus Japonica* and some others, Rubus, Ginkgo, Sambucus, Symphoricarpus, Hydrangea, Syringa, Schizophragma, Decumaria, *Ribes Gordoni*, Styrax, Diervillas, Rhodotypos, Vinca, Pterostyrax.

Some Viburnums like *V. cassinoides, V. Opulus, V. plicatum, V. dentatum* and *V. Sieboldii* root readily from soft-wood cuttings; others are best propagated by layering or grafting. Some species of Roses, such as *R. multiflora, R. repens* and *R. setigera*, root quite easily, while others, like *R. rubiginosa* and *R. rubrifolia*, refuse to root at all.

Exochordas, Clethras, Andromedas, Hollys, Osmanthus, Stuartias, and other slow-rooting plants do much better under a bell-glass or double-light frame. Where only small quantities of plants are needed, five or six inch pots, well drained, all the other conditions being the same, can be used in a frame with an easterly exposure instead of the propagating bench. Whatever methods are used, the greatest watchfulness and care must be exercised at all times, or the result will be failure, however well the mechanical part of the work is done.

One of the easiest methods of increasing woody plants during the summer is by layering. This for places where large quantities of plants are not wanted, is the surest way, and requires the least care, after the operation is once completed; and many plants difficult to propagate by cutting are sure in time to root from layers. At one time, in fact, few nurseries of any size were without a place set apart as a stool-ground, so-called, and many nurseries at home, as well as abroad, use this method for increasing many plants to-day. In forming a stool-ground, select a good piece of good, light loam, well enriched with rotted manure. Trench it well and set out the plants from three to six feet apart, according to their habit of growth. This gives plenty of room to work all around the plants after they have been thoroughly established. After removing the soil to the depth of from four to six inches, gently draw down the branches to be layered, fixing them in place by hooked pegs, and, with a sharp knife, after removing the surplus leaves, cut half way through the stem, just below an eye, then drawing the knife towards you, cut the branch lengthwise from one to two inches, according to its size. Cutting the stem of the layer on the under side, as is the usual way, is often followed by the breaking of the layer, if it is at all brittle. This is prevented by making the cut on the upper side and moving the tongue slightly to one side. After being pegged down the layer should be covered with from four to six inches of loam. In many plants it is not necessary to tongue the layer, a slight twist being sufficient. With others it is only necessary to bury the stem, while others again root if the branch is only held in contact with the surface of moist earth. The only attention demanded by layers is plenty of water during the dry season and keeping the ground clean. A special ground set apart for this work is not necessary. Any plant can be layered if a trench is dug around it and filled with good loam, into which the tongued or twisted branch is held. While many layered plants will root in a few weeks, others will take a year, and some two and even three. Some will need to be recut or ringed to make them root. After layers are rooted they should be severed from the branch, pruned and transplanted to the nursery, in the same way as other plants. Almost every hard-wood plant known can be rooted from a layer if the proper time is allowed.

Arnold Arboretum. *Jackson Dawson.*

The Bush Honeysuckles.

WE have many species and varieties of the Bush Honeysuckles on the college grounds, most of which have proved as hardy in wood and perfect in leaf as the best of our native trees and shrubs of the west during our recent trying years. As a full list of those now in flower would have but little general interest, I will only name three or four typical forms that will prove valuable over large areas of the country for lawn planting and for ornamental hedges and screens.

Lonicera Xylosteum.—Our form of this variable species we found at Proskau, in north Silesia, where it is used for ornamental hedges and as a bee-plant. Its fine foliage, profuse creamy-white flowers, handsome fruit and spreading pendant habit, also fit it for single planting upon the lawn. In every respect it is an improvement on our common Tartarian Honeysuckle. While our other varieties and species are rarely visited by the bees, *L. Xylosteum* is swarming with them while in flower.

Lonicera alpigena.—Our form of the alpine Honeysuckle is also from north Silesia. Its foliage is large and handsome, and its thick-branched, drooping habit fits it peculiarly for hedge-row or for single lawn specimens. Its flowers are white, followed by red berries as large as small cherries.

Lonicera splendens.—This is listed as a variety of *L. Tartarica*, but it belongs to a very distinct type from east Europe or central Asia. Some of the best named varieties we have, such as Elegans, Gracilis, Rubra grandiflora, Speciosa and Virginalis grandiflora, evidently belong to this soft-foliaged type with red or yellow berries. We have also been very successful in growing seedlings from this strain. Out of every one hundred seedlings, now eight years old, from seed sent us by Professor Sargent, not one can be found that is not superior in foliage, habit, flower and berries to the old Tartarian form, and some of them have larger flowers and the bushes assume

a handsomer form than any of the French varieties we have. This is specially true of some of the white-flowering seedlings with yellow berries.

In connection with the remark that *L. Xylosteum* is a good honey-producing plant, I will add that our fine hedge-row of the Amur Barberry and our plants of *Acer Ginnala* are also thronged at this time with honey-seekers, while the Spiræas, Siberian Almonds and most other shrubs in flower are neglected.

Ames, Ia. *J. L. Budd.*

Notes on Wild Flowers.

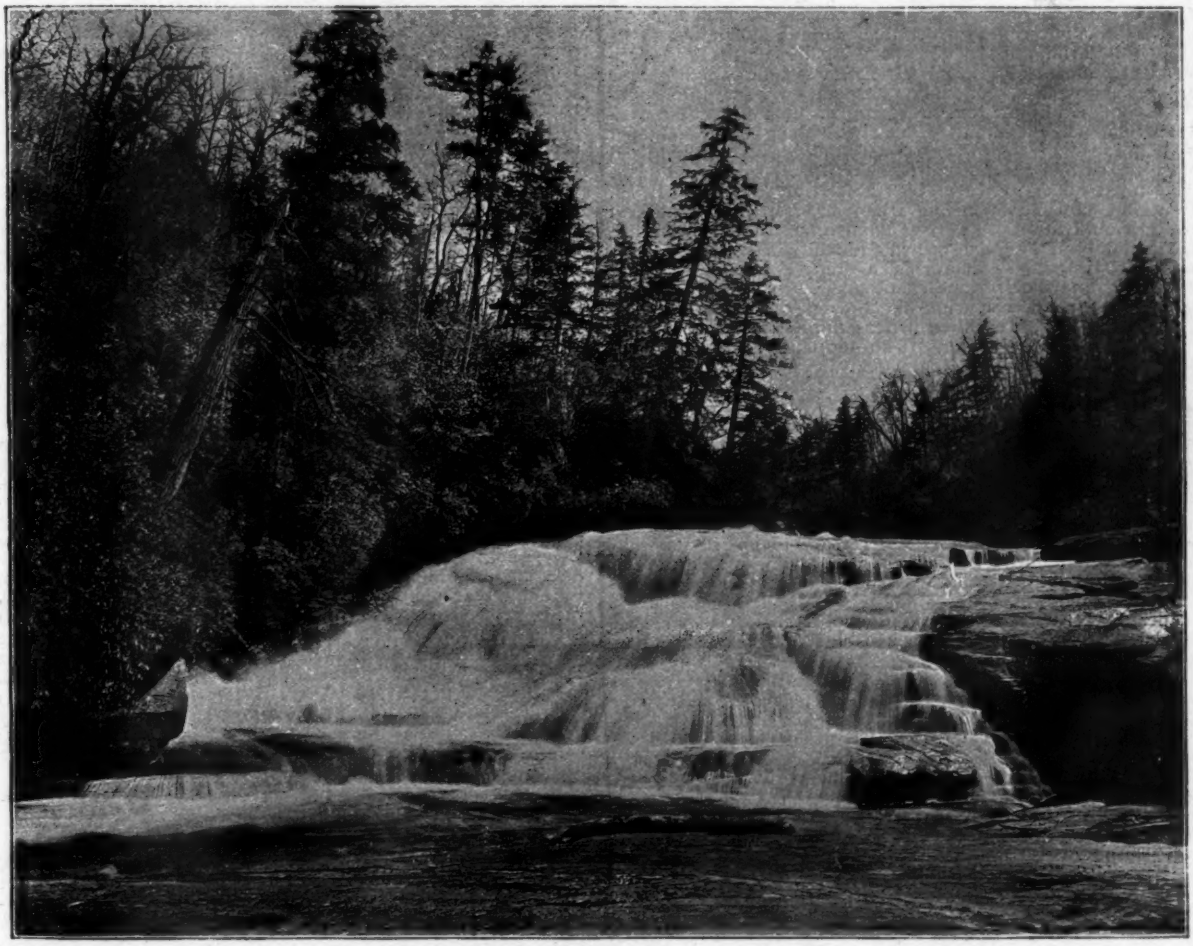
ONE of the earliest and prettiest spring flowers is the purple Saxifrage, *Saxifraga oppositifolia*. Its little tufts or mats of dense foliage start into growth as soon as the snow is off in spring, and the solitary rose-purple flowers which immediately follow are often so dense as to almost hide the foliage and produce a solid mass of color. It should be set in the autumn, and prefers a moist, loamy soil. It is desirable for slopes of rock-work. Another early species, with white flowers, is the common *Saxifraga Virginiensis*, but it is not to be compared in beauty to the former.

Our two Dicentras (*D. Cucularia* and *D. Canadensis*) are both early, and are now gone to seed. Their fine, delicate foliage is as beautiful as their flowers. They do best in a rich, well-drained soil, with plenty of leaf-mould about their roots.

The Bloodroot (*Sanguinaria Canadensis*) is a pretty plant, with its large, kidney-shaped leaves and its early, solitary, handsome white flower. It likes the shade and moist, well-drained soil, with plenty of peat or leaf-mould. It does best when planted in clumps of six or ten, so that they will form dense masses of foliage which seem to keep the roots cool. At all events the plants in groups thrive better than where each plant is set separately with more room. Of the Dog-tooth Violets (Erythroniums), *E. Americanum*, with its pretty yellow flowers, is not difficult to grow. It should be planted in autumn, six inches below the surface, and will flourish in sun or shade. *E. grandiflorum*, from California and Oregon, is easily grown in the same manner, but like all of these early-flowering plants, it does best when planted in autumn.

One of the prettiest early flowers, and not a difficult one to grow if placed in a cool and shaded location, is that charming little Orchid, *Calypso borealis*. It is seldom in flower before the middle of May in its natural home in the dense shade of Arbor Vitæ trees, but when set in the coolest nook of our gardens it is fully a week earlier.

Of the Spring Beauties, *Claytonia Caroliniana* is mostly out of flower, and the *C. Virginica* is just beginning to bloom. Both are pretty, and should not be overlooked in making a collection of this class of plants. A rich, shaded and well-drained situation is what they like.



The Home of the Carolina Hemlock.—See page 267.

Two very desirable plants now in bloom with us, in the open sunlight with ordinary culture, are the *Mertensia Virginica* (Virginia Cowslip), with its large, hanging clusters of blue or purple flowers, and the *Dodecatheon Meadia* (Shooting-star), with its purplish-yellow flowers. The former is the first in flower, but there is usually little difference in their time of bloom. *Mitella diphylla* (Miter Wort) is in bloom, and its long racemes of small, white flowers are pretty, but we think it not so desirable a plant as the False Miterwort (*Tiarella cordifolia*), which flowers at the same time, producing more showy flowers and much handsomer foliage.

Two charming little plants are *Thalictrum anemonoides* and the Wind Flower (*Anemone nemorosa*). The former seems to

take more easily to cultivation, and is with us longer in bloom. Both have white flowers half an inch or more in diameter, and both like partly shaded situations.

All of the Trilliums are still in flower or are just past blooming. *T. grandiflorum*, the finest of them all, is in its prime. This plant is fast growing in favor in the United States. Large numbers were sent to Europe fifteen or more years ago, but it is comparatively a short time since it has been sold to any extent by dealers in this country. It is very hardy, and does well either in the sun or shade, if in moist, well-drained soil. Not much inferior to *T. grandiflorum* is the Californian variety of *T. sessile*. Its petals are nearly white, and being just above the large, deep-green leaves, they appear to great advantage. The bulb is very large, and often sends up several strong stems, each bearing a flower. *Trillium erythrocarpum* (the Painted Trillium) is handsome, but somewhat difficult to grow successfully. It needs a rich, loamy soil, and the bulbs should be planted deep. All the Trilliums, and there are several other species, like a rich, well-drained soil, and the finest flowers are generally found in the shade.

But the Trilliums are not so interesting as the Lady Slippers. Of these, *Cypripedium parviflorum*, the small yellow species is now in flower, and its purple sepals with the bright-yellow inflated lip make it conspicuous. It is one of the easiest Orchids to grow, and will thrive, either in the shade or sun, and in loamy soil if peat or leaf-mould is plentifully mixed with the earth about the roots. *C. arietinum* is also in flower. This plant needs shade and a moist but well-drained soil. It is not conspicuous, but when brought to its highest state of cultivation it is very handsome. The flowers are small, dainty and reddish-brown and white in color. *C. montanum*, of Oregon and California, a pretty species with white flowers, somewhat resembles *C. candidum*, but usually has more than one flower, while the flowers of *C. candidum* are single. It is not so easily grown as the Eastern species, and needs protection in winter. If strong plants are set in well-shaded and well-drained, loamy soil they will flower for two seasons.

Charlotte, Vt., May 16th. *F. H. Horsford.*

Window Ferneries.

A TASTEFULLY-ARRANGED window-garden of Ferns, even if of small dimensions, adds greatly in the embellishment of a home, and is not necessarily a costly experiment to the amateur. Attention is necessary to insure its well-being, but if the plants are selected with a view to their fitness, much disappointment will be avoided.

These miniature gardens may now be had in a variety of shapes and forms, and it may be mentioned that those enclosed by glass usually give greater satisfaction, on account of the less rapid evaporation of moisture.

But whatever plan be adopted, the pan or other vessel in which the plants are placed, should be well provided with drainage, broken stone and charcoal being an excellent mixture for this purpose, which should be placed in a layer in the bottom of the pan, the latter being pierced with holes, so as to allow the easy escape of the surplus water. In the matter of soil it will be found that many of the most suitable Ferns for house use are not very fastidious, provided the soil be light, though a mixture of two parts peat to one of loam, with a fair quantity of rather coarse, sharp sand, will always prove satisfactory.

It is generally best to use those species and varieties that are content with a green-house temperature of 50° to 55°, as, for instance, several kinds of Pteris, such as *P. argyræa*, *P. Cretica magnifica*, *P. serrulata* and *P. serrulata cristata*, and during the summer months *P. scaberula* may also be used, the deciduous habit of the latter making it somewhat unsatisfactory in the winter and spring. *Adiantum cuneatum*, *A. pubescens* and *A. Capillus-Veneris* will prove worthy representatives of the Maiden-hair Ferns, and *Onychium Japonicum* and *Davallia tenuifolia stricta* are among the best in their respective genera for this purpose. A very pleasing effect is produced by the mixture of a few of the coarser-fronded sorts, such as *Lastrea Sieboldi*, *Doryopteris nobilis* and *D. palmata* and small plants of *Polypodium aureum*, with their peculiarly glaucous fronds, make a good contrast with the more delicate-looking species. Small plants of various Palms and other foliage-plants may be used to advantage for centre-pieces in these window-ferneries, *Cocos Weddelliana* being specially adapted to this use, as is also *Geonoma gracilis*, though the latter will not stand nearly as much rough usage as the Cocos. Small plants of *Pandanus Veitchii* and *P. utilis* are admirable, and will keep in condition for a long time, as will also *Aralia Veitchii*, the elegant foliage of the latter being quite enduring, and making a charming combination with the Ferns.

Another useful little plant for this purpose in this connection, is the Japanese Sweet Flag, *Acorus Japonicus variegatus*, it being easy to grow and very pretty.

A more finished appearance is given to the fernery if the surface of the soil is covered with a carpeting composed of one of the low-growing Selaginellas, such as *S. Kraussiana*, *S. Kraussiana aurea*, *S. densa*, or even *S. apus*, the latter, though a native and perfectly hardy, is not by any means to be despised on that account, being of rapid growth and neat appearance. In the treatment of window-ferneries the often-repeated injunction, never to allow growing Ferns to become very dry, still holds good, and while giving thorough watering at the root, it will be found best to keep the moisture off the foliage, else the latter may soon become disfigured.

W. H. Taplin.

About Melons.—Years ago it was a common practice to plant Melons, literally, in "hills" raised above the surface of the ground, and some still think such a practice necessary. When the seed is sown early there may be some advantage in this, since the elevation will be warmer than the flat surface. But, as a rule, in soil best suited for Melons—a warm, sandy loam—a more thrifty growth and more prolonged health of the vine can be secured by making the hills really hollows. Nothing so promotes the growth of a Melon-vine as the drawing of fresh earth to the stem, and a vine planted a few inches lower than the general surface of the soil, by a gradual drawing-in of the soil by the time cultivation ceases can be on quite a ridge, and thus get the advantage of the hill with the further advantage of having its roots in moister and cooler soil than would have been possible if planted on a ridge. These remarks will apply equally well to Watermelons as to Muskmelons.

In growing Melons for home use quality is the first consideration. Of late years the effort among seedsmen has been to produce a Watermelon with a tough rind, adapted to the long shipment from the South. This has been obtained at the expense of quality. In our home-garden it is of no sort of advantage to raise a Watermelon which will support a weight of half a ton, as some are said to do. Neither do we care for its being "iron clad" or "copper fastened," unless the inside is well worthy of such protection. The newer sorts of Watermelons, while they have been improved for the purposes of the shipper, have not been of the average quality of some of the older sorts. We have found none superior for this region to the "Gypsey" and the "Mountain Sweet." The "Volga" is said to be small and of high quality, but we are growing it for the first time this year and cannot give an opinion upon it. In Muskmelons it is also a good rule to select varieties, not by size and looks, but by their quality for the table. In Muskmelons size is often attained at the expense of quality. Many contrivances have been proposed for protecting young Melon-seedlings from the attacks of the striped bugs, which devour them when in the seed-leaf, but most of them are very troublesome. For many years I have used a little raw bone-flour, dusted over the young plants as soon as they are fairly up. If beetles are there they leave at once, and the plants are benefited by the application.

Early fruitfulness is promoted by nipping off the tips of the vines when about three feet long. *W. F. Massey.*

Crozet, Va.

Garden field-labels are a source of great annoyance. But if labels are not necessary the greater part of the annoyance is at once dispelled. In other words, plant and record your plantings in such a way that you do not need to depend upon labels. But they are convenient, nevertheless. For trees the best labels are made of zinc, cut into strips about one inch by five. The name is written with a pencil, and the opposite end of the label is bent about a limb. For stake-labels I use the ordinary twelve-inch, thin, commercial stake, always primed. These are inexpensive and are exceedingly handy for temporary use. But if more permanent or conspicuous stakes are used, I have found the best to be those which we have recently had cut for us at a planing-mill. They are eighteen inches long, three inches wide and one and a half inches thick, made of clear white pine, and sharpened by a buzz-saw at the mill. Early in spring these are all primed with white lead. They take a soft, broad pencil readily. If they are needed twice during the season, a mark is drawn through the name, and the other side is used. In the winter-time a thin shaving is taken off the stake to remove the name, another priming is given, and the label is again new. In this way the label lasts many years for many things, and although it is somewhat expensive to begin with, it is really the cheapest and most serviceable label made. I like the lead pencil better than a brush

and paint. The lead usually endures longer, and it is easily applied at just the moment the label is wanted. A carpenter's pencil is best for this work.

Cornell University. *L. H. Bailey.*

Heuchera Sanguinea.—This plant, now in bloom, justifies all that has already been written and said in its favor. The flowers are borne on long, slender stems and are of a bright coral red. The foliage is handsome also, being mottled with brown. The plants from seed vary considerably in this respect. Our plants are twelve months old from seed, but we find that side shoots are freely produced, and these root readily and soon form nice plants. It would be interesting to know if any one has tested the plant as to its hardiness in the Eastern States, it being a native of Mexico. It will probably prove tender, but even if this is so the plant has the value of producing flowers in winter when potted and placed in a warm house where a temperature of about 50° can be maintained.

Papaver bracteatum roseum.—The gorgeous Oriental Poppy is a conspicuous plant just now in the flower-garden, and its merits as a showy border-perennial are pretty generally recognized. *Papaver bracteatum* is, strictly speaking, only a variety of *P. orientale*, differing principally in the leafy bracts attached to the flowers. We have in bloom at the present time a variety of *P. bracteatum*, the flowers of which are fully as large, but the color is a beautiful clear pink similar to that of a Mermet Rose. This plant is known as *P. bracteatum roseum*, and is of English origin. One peculiarity of this plant is that seedlings raised invariably revert to the typical form; this necessarily makes propagation rather slow, and may account for the fact that it has not become common yet, though known to gardens for a number of years. In other respects the plant is as hardy and floriferous as *P. Orientale*, and promises to be quite an acquisition to the list of perennial Poppies, which already contains one sterling variety of American origin—*P. Parkmanni*.

Passaic, N. J. *E. O. Orpet.*

Fig. 112.—Syringa Amurensis.—See page 267.

Orchid Notes.

Cypripedium bellatulum.—This handsome addition to the dwarf-growing section of Lady Slippers, represented by *C. Godefroyæ*, *C. concolor* and *C. niveum*, was introduced to cultivation early last year by Messrs. Low & Co., of Clapton, near London, but, for certain obvious reasons, they did not mention its native home, which, however, is guessed to be somewhere in further India. Botanically speaking, *C. bellatulum* may be regarded as a very superior form of *C. Godefroyæ*, which it most nearly resembles in shape and coloring. It has already become amenable to cultivation, and there is no doubt that it will soon find its way into every collection of Cypripediums.

In habit it is very dwarf and compact, with elliptic-oblong leaves of a deep green color above, mottled with a paler shade, while the under surface is thickly covered with dark purplish spots and blotches in close contact. The purplish, downy scapes are three or four inches in length, each bearing a single flower about three inches or more across. The upper suborbicular sepal, and the oval, depressed petals are usually pure white, thickly covered with large and small brownish-purple blotches and spots, which give them a most handsome and attractive appearance. These blotches show through on the back of the segments, which are often suffused with a purplish tinge. The long, narrow pouch is very small in comparison with the other parts of the flower; it is also white, and covered on the inner, as well as the outer, surface with smaller brownish-purple spots. The staminode, which is longer than that of any other variety of this section, is similarly colored.

The color of the flowers is somewhat changeable, varying from pale yellow to ivory white, while the blotches in some flowers are much larger and more dense than in others. Two varieties of this species already exist; the one called Roseum may be distinguished by the suffusion of rose which pervades the segments of the flower; the other, known as Egregium, is said to have the upper sepal slightly trilobed, and the purple blotches on the front face of the flower are so light in character that no trace of them is discernible on the back.

This species requires very little attention, provided that it is grown in a warm and moist atmosphere. Some plants in the nursery are grown in pots, and others are planted out, and all are doing equally well. The compost used is peat and loam, with a little sphagnum mixed. Some of the plants have been in flower now for three weeks, and are still in perfect condition; they require a rather shady position and not much water.

St. Albans, May, 1889. *John Weathers.*

Cattleya Mendellii.—This grand Orchid will now be found in full beauty in most collections, and, with *C. Mossiæ*, will keep up a fine show of bloom for some weeks. Its native home is on the eastern slopes of the Cordilleras, in Columbia, where it may be found on trees and rocks often exposed to the strong rays of the sun, but where there is abundance of water to bathe the roots. The flower generally measures about seven inches across, with white or tinted sepals and petals of wavy outline. Its chief beauty, however, lies in the large, spreading lip, which is very much crisped, with a front lobe of crimson-purple. There are many beautiful varieties; a pure white one with a slight dash of yellow in the throat is called Alba. Bella and Morgania are pale-colored forms; Imperator is an immense flower with a magnificent lip, but the best I have yet seen is one called Superbissima, which was sold in London a few years since for one thousand dollars; the half of this plant is in the collection here. *C. Mendellii* grows very freely, needing plenty of drainage, little potting material, strong heat with plenty of water during active growth, and a long, cool rest, but it should not be kept too dry.

Ærides crispum was introduced, nearly half a century since, from Bombay, and may be considered one of the very best of the genus. It is very robust in growth, attaining a height of four or five feet, and when the leaves are retained to the base it makes a very handsome plant. The leaves, which closely clasp the stem, are flat, broad, dark green and leathery, six to eight inches long. From the axils of these arise the erect racemes, which are often branched and bear numerous large handsome flowers about two inches across, white suffused with rose, with a beautiful large lip of rosy-purple, very crisp at the edges, and terminating in a horn-like spur. The variety Lindleyanum is more robust in growth, with larger and more distinct colored flowers. The variety Warneri differs a good deal from the type in habit, is much shorter, more slender, and with short and very narrow leaves, the dark mark at base of the leaves being very conspicuous. All of the varieties grow freely in baskets or pots of moss and peat. With plenty of heat it is hardly possible to give too much water in the growing season, and weak applications of liquid manure are beneficial. Only large plants of this Orchid bloom freely. It may be that it needs more sunlight to thoroughly ripen the growths. *F. Goldring.*

Kenwood, N. Y.

Notes from the Arnold Arboretum.

Berberis Sieboldi.—A Barberry, sent some years ago to the Arboretum from the Flushing Nurseries, under the name of *Berberis "Hakodate,"* no doubt so-called from the place where the plant was first obtained, proves to be the little-known *B. Sieboldi* of Miquel ("Prol. Fl. Jap." 1). It is one of the handsomest of all the Barberries, and a most desirable garden plant. It is a stout shrub of compact habit, growing here three or four feet high, with branches covered with gray bark; and with short, slender, three-branched, chestnut-colored spines, very short petioles, oblong-lanceolate, or obovate leaves, rounded at the apex, densely setulose-ciliolate on the margins, smooth, rather coriaceous at maturity, very bright green and lustrous. The fragrant flowers which are borne in short, semi-erect, many-flowered racemes, an inch and a half long, are pale canary color, with obovate rounded sepals and petals, and about the size of those of *B. vulgaris*. The fruit is large (one-third of an inch long), oval, and bright scarlet. This plant, which has the general habit and somewhat the appearance of *B. vulgaris*, may always be distinguished from that species by the ciliate margins of the leaves, which are quite destitute of rigid teeth. The leaves are more lustrous, the racemes are erect, not pendulous, as is *B. vulgaris;* the flowers are lighter colored than in that species, and in the autumn the foliage assumes the most brilliant coloring, which makes this plant a conspicuous object among the other Barberries of the collection at that season of the year. *Berberis Sieboldi* is perfectly hardy and very free flowering; and it is certainly one of the most desirable shrubs brought from Japan to this country. Seed of this species, under its right name, was distributed last year from the Arboretum among European gardens, where it does not appear to have been cultivated. A figure of this species has been drawn for publication in Garden and Forest.

Berberis heteropoda, a Turkestan species, has been for several years an inhabitant of the Arboretum. It is not, however, perfectly hardy here, but this year, favored by the mild winter, it is flowering much more freely than usual. It is a very ornamental and distinct species, with angled stems covered with dark gray bark, slender, simple, or three-forked spines, and obovate entire, or sometimes sparingly and minutely toothed leaves, which are pale bluish-green, lighter colored on the lower surface, and borne on very long, slender petioles. The pale yellow flowers in short, few-(3–4)flowered racemes, which are shorter than the leaves, and destitute of fragrance. The peculiar pale coloring of the foliage makes this a desirable plant, which might well find a place in gardens wherever the climate is not too severe for its full development. It attains in its native country, according to Dr. Regel, a height of six to ten feet. This species is considered in the "Botany of British India," a variety of *B. vulgaris*, but for garden purposes it is certainly abundantly distinct from that very variable and widely-distributed plant.

Berberis buxifolia (the *B. dulcis* of gardens) is in flower. It is a pretty species, with small oval or oblong, nearly sessile, entire leaves, and large, solitary, orange flowers. It is a native of Patagonia, and not very hardy here, even when carefully covered during winter. This year it is flowering more freely than usual.

A curious and beautiful Barberry now in flower here is not referable to any described species, while some of its characters suggest a possible hybrid between *B. vulgaris* and *B. Thunbergii*. It has the bark upon the branches of *B. vulgaris*, the simple, slender spines of *B. Thunbergii*, the tufted, entire obovate leaves of this last species. They are considerably larger, however, paler green, more membranaceous, and borne on long, slender petioles. The flowers are produced in long-stalked (sometimes nearly an inch long), umbellate racemes, of eight or ten or sometimes only of three or four flowers. They are larger than those of *B. Thunbergii*, bright yellow (those of *B. Thunbergii* are much paler), with rounded sepals and petals, and the red-marked filaments of the Japanese plant. They open a week or ten days later than those of *B. Thunbergii*, and a few days earlier than those of *B. vulgaris*, and possess a trace merely of the delightful fragrance of those of this species. The fruit resembles very closely that of *B. Thunbergii*, and hangs, as is the case with that plant, bright and fresh upon the branches throughout the winter and early spring. Several years ago, Max Leichtlin sent to the Arboretum seeds of "two red-fruited" Barberries, without any indication of their origin.

A large proportion of the seedlings raised from this seed proved to be *B. Thunbergii*, but among them were several individuals of this peculiar plant, which suggests in its umbellate inflorescence some of the forms of the sub-evergreen *B. aristata* of the Himalayas. But whether, as I suspect, it is a hybrid, or some species unknown here, it is an exceedingly ornamental and valuable garden plant; one of the neatest of the whole genus in its habit of growth, perfectly hardy, and very beautiful when its graceful branches are covered with its nodding umbels of large, bright-colored flowers.

Japanese Maples are not, as a rule, very reliable in this climate, too often dying suddenly in summer without any apparent cause; but one of the Japanese Negundos (*N. cissifolium*) has so far been an exception to this rule, proving here to be a handsome, small, round-headed tree, with erect, stout branches, of excellent habit and pleasing coloring. The largest specimens, although only ten or twelve feet high by as much through the branches, have now flowered and fruited here for several years. It is a tree with smooth, gray bark, that of the young branches being pale red or brown and three-foliolate leaves, borne on long, slender, bright red, hairy petioles. The leaflets are acuminate, deeply incised towards the apex, short-stalked, hairy on the principal veins on the under surface, and on the margins, with a few short, scattered hairs on the upper surface. They are membranaceous and of a delicate pale yellow-green color, which very late in the autumn turns to bright yellow. The slender racemes of yellow flowers are erect, but become nodding as soon as the fruit begins to form; they are four or five inches long, the rachis, pedicels and wings of the young fruit red and covered with long, scattered hairs. *Negundo cissifolium* is, apparently, perfectly hardy; it grows rapidly, and has not been attacked yet by any insect or fungus. It is well suited for planting on the borders of a small lawn, or as a single specimen tree in the garden, for which purpose its small size and round, rather formal habit, admirably adapt it.

The Judas-tree or Red-bud of the Middle and Southern States (*Cercis Canadensis*) is in bloom. It is one of the most beautiful flowering trees of the North American forest; and there are few more beautiful objects than the great masses of this tree in some parts of the South or South-west, notably along the eastern borders of the Indian Territory and in eastern Texas, when they are covered with their purple flowers in very early spring. There the Red-bud becomes a tall tree, with a stout trunk; further north, although nearly always arborescent, it never attains the size developed in the more favorable climate and more generous soil of the South. It is remarkable that so fine a plant should be neglected by our horticulturists, who hunt the remotest corners of the earth for novelties with which to embellish their gardens, and pass native species which cannot be matched anywhere. *Cercis Canadensis* is rarely planted in gardens in these days, and yet a plant in flower standing out alone before a dark background of Hemlocks or of Pines, or when it can contrast its purple flowers with the white floral leaves (the two plants flower here together) of the Flowering Dogwood (*Cornus florida*) is an object which fully satisfies the imagination, and one which is not easily forgotten. The Red-bud, although not a native of eastern New England, is perfectly hardy here; it grows rapidly, and is an object of beauty from the time the abundant flowers cover the naked branches until the late autumn, when the red-brown pods are ripe.

Prunus emarginata has very unexpectedly proved perfectly hardy in the Arboretum, where it has been growing during a number of years. It is a native of western North America, from the valley of the lower Fraser River southward to middle California, and eastward to Idaho and northern Montana. It is a small tree reaching, in the neighborhood of the coast, a height of thirty or forty feet, and occupying, generally, the low banks of streams. In the Arboretum it is a stout bush, eight or ten feet high, branching from the ground. The umbellate flowers, which the plants have produced this year in great profusion, are small, scarcely more than a third of an inch across when expanded, appearing simultaneously with the unfolding of the leaves, which are dark blue-green in color, ovate, minutely glandular-toothed, pubescent on the lower surface, as are the short petioles and young shoots. The fruit, which ripens about midsummer, is black, oval and half an inch long. This is an interesting plant, owing to the region from which it comes—a region with a climate so totally unlike that of eastern America that few of its plants thrive on this side of the continent.

Rhododendron Vaseyi (see GARDEN AND FOREST, i. f.) has flowered this year better than ever before. It is a garden plant of great beauty and value certainly. It flowers earlier than any of its race, and the clear pink color of the corolla is quite unlike that of any of the deciduous-leaved Rhododendrons. Its value for crossing with other species has not been shown yet, but it is probable that its blood, mingled with that of some species with deeper colored and larger flowers, will produce some remarkable results. A cross with the Rhodora, which is quite within the limits of possible hybridization, might be expected to produce a large-flowered plant of great beauty.

Caragana arborescens, the Siberian Pea-tree, is an old inhabitant of gardens, and a perfectly hardy small tree of good habit and an unfailing bloomer at this season of the year, when the erect branches are covered with its handsome, bright yellow, pea-shaped flowers borne in fascicled clusters from the axils of the compound leaves. These have spinescent stipules, and consist of four to six pairs of small, oblong-oval vilous leaflets. This tree, which will grow to a height of fifteen or twenty feet, is often found in nurseries grafted as a tall standard; but it makes a much more beautiful object when it is grown on its own roots and is allowed to send out its branches from near the ground.

The shrubby *Caragana frutescens* is a native of Siberia also, and a desirable plant. It has larger solitary flowers of paler yellow, and smooth leaves with broader leaflets. It flowers a few days earlier than *C. arborescens*, and is equally hardy. Both species are easily grown from seed.

May 18th. J.

Periodical Literature.

THE May *Bulletin of Miscellaneous Information* issued by the authorities of the Royal Gardens of Kew is devoted to an account of the Persian Zalil (*Delphinium Zalil*) noticed in this journal (i. p. 6., ii. p. 227); to the economic properties of a number of New Zealand timbers, the most interesting of which are Red Myrtle (*Fagus Cunninghamii*), Huon Pine (*Dacrydium Franklinii*) and Black wood (*Acacia melanoxylon*); and to an interesting account of Lily flowers and bulbs used as food. From this it appears that the trade of Lily flowers from Chinkiang was last year over seven and a half million pounds. These flowers are the dried blossoms of *Hemerocallis graminea* and of *Lilium bulbiferum*. They are used by the Chinese for flavoring soups, and are also eaten as a vegetable. They are also said to be efficacious in pulmonary diseases, and to have tonic properties. Hankan is the chief place of export in China, and great quantities are sent from Japan to the Flowery Kingdom. Lily bulbs are an important article of food in Japan.

There are articles on Pa-êrt tea, an article of commerce in the province of Yun-nan, in south-west China, said to possess medicinal and invigorating properties, and to be used to aid digestion after heavy meals; on the short-podded yam-Bean (*Pachyrhizus angulatus*), widely cultivated in the tropics for the starch of its tuberous roots.

This part concludes with a list of the officers of the Royal Garden, and of the other British and Colonial botanical establishments. The *Bulletin* is well sustained in interest, and in its practical value to all persons who have to occupy themselves with economic plants and plant products.

Recent Publications.

A Handbook of Cryptogamic Botany, by Alfred W. Bennett and George Murray. With 378 illustrations. London and New York: Longmans, Green & Co.

This is an attractive looking volume of about 450 pages, with a large number of well-executed figures. Since the appearance of Berkeley's "Introduction to Cryptogamic Botany," in 1857, there have been several excellent English translations of German works in which the different divisions of Cryptogams have been treated either incidentally or specially, but the present Handbook is the first attempt by English writers to prepare a general treatise on the subject. So much has been written of late years on the development and classification of Cryptogams that it is almost a hopeless task to summarize all that has been written, and the authors are to be congratulated on their success in presenting so nearly complete a summary of what had appeared up to the date when their book went to press. After a brief introduction—too brief to be in all respects clear to the reader who is not more or less of an expert—the different subdivisions are discussed, beginning with Vascular Cryptogams. Whether one should begin with the higher groups and go downwards, or the reverse, seems to us to be of comparatively little moment. Each plan has its advantages, and the only real question is, having settled upon one method rather than the other, How has the general plan been carried out?

Naturally, the part of the Handbook most symmetrically treated—if one may use such an expression—is that relating to Vascular Cryptogams and Muscineæ, for those groups have been so long and so well studied that it is possible to give in a condensed form an account which not only will be recognized as accurate by experts, but will also be intelligible to students. With regard to Thallophytes it is quite another matter. He must be certainly very sanguine or strongly prejudiced who believes that any really satisfactory classification of Thallophytes has as yet been discovered. About all that can be done is to relate the facts known with regard to their structure and development in as clear and simple an arrangement as possible, without much pretense at classification, as the word is understood when speaking of higher plants. The subdivisions adopted are Algæ, Fungi, Mycetozoa and Protophyta, and, admitting that these subdivisions are arbitrary and, in a sense, mechanical rather than strictly scientific, this arrangement has what appears to us the supreme merit, in a work of this kind, of being more easily followed than other classifications which have been proposed, and it also brings near together orders of plants which, whether rightly or wrongly, are always studied together. For a long time to come we shall have algologists and mycologists, but we are not likely to have conjugatists, oosporists and carposporists. What the student needs is to have pointed out distinctly the parallelism of the reproduction in certain Algæ and certain Fungi—which the present method sufficiently accomplishes—and there the matter had better rest until experts have settled more clearly the doubtful points in the relationships of Thallophytes.

If we look at the manner in which the authors have carried out their general plan, we are struck at once with the unusual and disproportionate amount of space devoted to Algæ; 120 pages to Algæ proper and forty-three to algoid protophytes, while only 101 pages are devoted to Fungi, including Mycetozoa, and Bacteria barely cover seven pages. In most text-books considerably more space is given to Fungi than to Algæ. We do not, in the least, object to the amount of space given to Algæ, but, on the contrary, regard this part of the work as the most valuable, as it goes beyond what is given in similar treatises, and contains a deal of information which could have been obtained only by an extended and careful reading. But the relatively small space given to Fungi has made it impossible to treat adequately a number of subjects on which the student and general reader ought to have clearly expressed and fully explained information, and we consider this part of the Handbook too condensed to be followed readily by those who are not already pretty well informed. The placing of *Diatomaceæ* among Protophyta rather than near *Desmidiaceæ* is scarcely to be commended, for, although we agree with Mr. Bennett in thinking it very doubtful whether the *Diatomaceæ* are zygosporic in the strict sense, we still believe that they can be described better in connection with *Desmidiaceæ* than when removed to the ill-assorted group of Protophyta, with which they have little in common except that their reproduction is not well known. Nor can we agree that the position of *Ulvaceæ* is uncertain, but think that they belong to *Confervoideæ* and not to *Florideæ*, for their resemblance to the genera *Porphyra* and *Bangia* is merely superficial, and does not indicate a real affinity.

In short, the Hand-book is a valuable summary of the present state of our knowledge of a branch of botany which is becoming more and more popular, and the editorial work has been well done, so that the errors which are seen at first reading are few and unimportant. We would, however, suggest that the name *Mazæa*, on p. 440, should be changed to *Nostochopsis*. If there is any general criticism to be made it is that the work, as a whole, has perhaps a little too much the air of a catalogue of orders and sub-orders, and one would be glad to have the essential and general parts brought out somewhat more plainly by larger type or other printers' device, leaving specific details to smaller type. There is only one point on which we have any serious objection to offer, and that is the introduction of new terms to replace others already well fixed in English botanical literature. In the introduction the following statement is made: "Many of the terms which we employ throughout this volume, such as sporange, archegone, antherid, cœnobe, sclerote, epiderm, etc., will probably be accepted at once; and it seems strange that the awkward and uncouth foreign forms of these words should have held their ground so long." We venture to hope that they will not be accepted, and would suggest that the reason why the so-called "awkward and uncouth foreign forms" have held their ground so long is because they have proved by experience to answer their purpose perfectly well. So far as technical botanical terms are concerned there is no intrinsic reason why they should be English in form. It is one of the many points of superiority of the English language that it can absorb and make a part of itself technical terms, whether classical compounds or derived from modern languages, and it is neither necessary nor in good taste to trim and prune words which have for years been accepted. Why, we would ask, is the commonly-accepted epidermis more uncouth than epiderm? or why is the French word sporange any less foreign than sporangium, which has been adopted for years by good English writers? Why is the word mycelium, which has become so thoroughly a part of the language that it has almost ceased to be technical, to be abandoned for the decidedly un-English mycele? To quote a passage at random on p. 370: "The male cells are *pollinoids* formed in a flask-shaped antherid, somewhat resembling a perithece." The unprejudiced reader would hardly be struck by the peculiarly "English" look of the sentence, and the meaning would be quite as plain if, adhering to the common nomenclature, the sentence had run as follows: The male cells, called spermatia, are formed in a flask-shaped sack, the spermogonium, which somewhat resembles a perithecium. The substitution of the word "sperm" for "spore" in compounds, like "zygospore" and "oospore," only makes a bad matter worse. We can only regret that in a book, otherwise so good, the authors have allowed themselves to be carried away by what we must consider an unwise desire to substitute new terms for well-established terms which fulfil their purpose sufficiently well.

Correspondence.

To the Editor of Garden and Forest:

Sir.—Several years since, when the question of injury to conifers was being discussed in the *Gardeners' Monthly*, I had occasion to notice it somewhat in Cambridge and elsewhere. Red squirrels were abundant, and were seen to clip some of the twigs found on the ground, but the marks they left at the broken end or about the buds were wanting on many twigs, which nevertheless appeared as if broken across—never with the smooth surface, characteristic of self-pruned twigs of the Poplars, Elms, "brittle-branched" Willows, etc. In St. Louis, where red squirrels are unknown (at least to me), the ground is often covered by hundreds of freshly-fallen twigs under the Norway Spruce, etc., especially toward the end of winter. Careful and repeated observation for the last four years has convinced me that if fox or gray squirrels (which, however, I have never seen in the botanical garden), or birds of any kind are responsible for the injury, they work during the night, and leave no evidence of their work on the fallen twigs, which are quite like those seen in Cambridge. So far as our trees are concerned, I quite agree with Mr. Fernow that the twigs are simply shaken off. After a sleet-storm the number is sometimes very great. *Wm. Trelease.*

St. Louis, May 5th.

To the Editor of Garden and Forest:

Sir.—I have read your tombstone article with solemn interest. I am much amongst graves; and were it not for the broken lives and hearts I often see at the edge of newly-opened ones, cemeteries and their monuments would suggest nothing to me but the tragedy of human vanity. May your article help to bring such tasteless egotism into disrepute, and establish some congruity between the gravestone and the fact of death.

New York City. *Clergyman.*

Vineland, New Jersey.

To the Editor of Garden and Forest:

Sir.—A land of Vines it is indeed, and the name which its venturesome founder bestowed upon this borough in the way of prophecy has been amply justified by the facts of subsequent history. And yet the belief that these sandy stretches in southern New Jersey were nearly worthless for any form of husbandry was almost universal twenty-five years ago, and the land had been called "The Barrens" time out of mind. The charcoal crop, however, was always a sure one, and there are men now living who have cut twice over some portions of the Vineland tract and carted the charcoal into Philadelphia, thirty-four miles away. This luxuriance of tree-growth ought to have suggested that the soil was not altogether destitute of plant-food. One Chestnut stump, at least, remains within the borough limits which is twenty-one feet in circumference, and its roots must have tapped big reservoirs of fertility somewhere. And yet no one had faith enough in the land to clear

and till it, and the farmer who declared that he would as soon think of raising a crop in a soil of pulverized glass as in the sands of "The Barrens" did not state the general belief with too great emphasis. Notwithstanding its proximity to Philadelphia, the tract of 34,000 acres was bought in 1860 for five dollars an acre, and to the daring purchaser the privilege was granted of paying only as fast as the land was re-sold to settlers. As the war closed greenbacks were floating freely, a good many people felt inclined to settle somewhere, a great volume of seductive advertising found its way into the press, and Vineland began to fill up rapidly with enthusiastic amateur farmers, who were convinced that five acres was more land than any man really needed to get rich upon. These hopeful people usually spent all their ready money in building a house, borrowed some more to set out a useless hedge and some trees and vines, and then began to rest, while their orchards and vineyards grew. A period of some depression naturally followed, but at last business has settled down upon a permanent basis, and the prosperity of the place seems established. Landis Avenue, the main street, is nine miles long, and many of the farms that front it contain only five or ten acres, and from these the owners are realizing a comfortable income.

But as Grape-vines and fruit trees took the place of scrub Oaks and Pines, the insects and fungi which prey upon them began to multiply, until the Downy Mildew and the Black Rot, not to speak of other rusts and blights, threatened to destroy the fruit industry. With some varieties of the Grape the rot made so clean a sweep of the crop that many vineyards were abandoned and rooted out. Colonel A. W. Pearson, one of the large growers, however, concluded that his vineyard was worth fighting for, and he began a series of experiments which attracted attention for their thoroughness, and finally he was selected by the Department of Agriculture as one of the agents to make trials of certain remedies which had been used with some promise in France. He feels confident that the two most destructive enemies of the vine can be held in check by preparations of copper sulphate. Last year, beside untreated vines on which ninety-five per cent. of the grapes were lost, vines sprayed with the Bordeaux mixture lost but two per cent. It was primarily to look at this experimental vineyard that I came to Vineland. It was too early, however, to see any effects of the diseases or their remedies, although an inspection of the methods of conducting the experiments was most interesting. It is not enough to discover some mixture that will kill the fungus. What is needed in practice is a certain remedy, which can be applied most cheaply and with least danger to the plant and to man. A great number of preparations are on trial, applied on belts running across the rows so as to take in every variety of vine, and with check lines of untreated vines between the belts sprayed with the different mixtures. A description of the remedies in detail would be tedious to your readers, and the reports at the close of the season will show which ones have proved of value.

The vines are set in rows nine feet apart, with a vine every six feet in the row. The stakes are short, and carry a single wire at a height of two feet and a half from the ground. The whole vineyard has been ploughed and cultivated till it is absolutely free from weeds, but as the fruit gains size tillage will be suspended, the weeds will be allowed to grow, and when ploughed under they will help to add a little humus to the light soil. On the 29th of May the fruit had already set on the Iron-clad variety, while the other kinds were not yet in blossom. This Iron-clad Grape, so-called because it has been proof against every attack of rot spores, is supposed by experts to be a natural hybrid between some form of *Vitis Labrusca* and *Vitis riparia*. The original vine, which is at least a hundred years old, still covers a great Oak on the banks of a little stream which empties into the Schuylkill a few miles from Philadelphia, and is good for something like a ton of Grapes every year. These vines show their remarkable vigor as compared with such varieties as Concord and Ives by the superior size of their stems, and the pressed juice of the Iron-clad Grape is so rich in color that three or four teaspoonfuls will give a fine claret color to a goblet of pure water. This color, as well as its freedom from rot, gives the Iron-clad exceptional value as a wine-grape, and its juice is in great demand where pure fruit syrups are used in soda fountains. And, by the way, Colonel Pearson finds that the manufacturer of unfermented wine, and of the syrups from strawberries, raspberries, blackberries, quinces, etc, are among the most profitable ways of utilizing fruits.

Colonel Pearson is using no bags, although he may cover some of his grapes for private use. A drive through Vineland, however, showed that in many vineyards this operation had already been performed, although the blossoms had not yet appeared, and in many others, groups of women were fastening bags over every cluster of flower-buds, pinning the paper to the canes, and not to the stems of the clusters, which were still so tender that the wind would snap them off. These bags protect the grapes from the spores of the fungus which fill the air later in the season, and they were formerly applied when the grapes were about the size of peas. Last year, however, it was found that the infection entered the cluster sometimes before the flower-buds opened, and it was found, too, that many varieties were fertilized perfectly when the flowers were enclosed in paper so as to exclude foreign pollen. It is in view of this experience that the bags are being applied so early to thousands of vines. In Colonel Pearson's opinion, the practice does not pay for ordinary commercial vineyards, although it may pay when fruit of extra quality is desired.

As we drove by the freight-station the area was crowded with wagons bringing in strawberries. The crop is a week earlier than usual this year, and when at its height a dozen or more car-loads are shipped every day, while twenty car-loads of blackberries is an ordinary day's picking. The boast of the villagers that there is never any mud in Vineland is probably a patriotic exaggeration, but that water soon filters away from the surface was evident in the fields, where plows were moving a few hours after four inches of rain had fallen. The soil is by no means uniform, and there are mucky hollows, which look dark and full of humus, and there are places where the clay comes near enough to the surface to mix with the sand and make it consistent. But it is in soil of this character that the effects of dry weather are most apparent. Where the land is said to be "sand all the way down," and the porous sub-soil permits the water to filter quickly through it, the roots of crops seem to penetrate more deeply, and the Corn will be green and growing here when its leaves are curled and wilted elsewhere. Deep-rooting trees like the Chestnut might be expected to thrive even without such evidence as is given by the great stump alluded to in an early part of this letter. As a matter of fact, one of the most beautiful rows of trees I saw was of Chestnuts planted along one of the streets. Each lot-owner was obliged by the terms of his title to plant a double row of trees along his street-front and to seed with grass the strip between the wheelway and sidewalk. As a result the avenues, which are 100 feet wide, are already bordered with fine trees and a continuous stretch of good turf. The general effect would have been better if a single species had been used in each row, and it is unfortunate that so many Silver Maples have been used when better trees have proved themselves so well adapted to the conditions here. I have rarely seen more thrifty Chestnuts, or Oaks of various species, or Tulip-trees, or Lindens, or Honey Locusts than those which shade the walks of Vineland.

Vineland, N. J. *S.*

Exhibitions.

Rhododendrons in Boston.

The exhibition of the Massachusetts Horticultural Society, held in Boston last Saturday, was devoted principally to Rhododendrons, for which Mr. H. H. Hunnewell, whose knowledge of these plants is only equalled by his skill and enthusiasm in collecting them, offers every year a number of special prizes. Several large collections were shown; that of Mr. Hunnewell, which was not entered for competition, numbered several hundred heads of flowers, and included all the principal hardy and many half-hardy varieties. The flowers in all the collections were of good size and quality, for the mild weather and the abundant rains of the spring months have favored their development. Nothing very new or striking in hardy varieties appeared, however, while there were probably fewer flowers of half-hardy varieties shown than in previous years. Indeed, the collection of the half-hardy varieties of *Rhododendron Catawbiense* is looked upon with less favor in the neighborhood of Boston than was the case a few years ago. The truth is they are very unsatisfactory plants to manage. Many are shy bloomers under the most favorable conditions in England even; but when it is necessary to lift them in the autumn every year, and protect them in pits through winter, many of the varieties refuse to flower at all, or will only flower once in three or four years. The delicately-colored flowers of such varieties we only see to advantage under canvas, which is essential, too, to shield them from the hot sun and frequent rains of early June, so that if they are not wanted for a flower-show, such as Mr. Hunnewell has provided annually for his friends during the last twenty years, they are practically useless. And even where Rhododendrons are shown under canvas there are now so many high-colored hardy varieties that a

remarkable display can be made with them alone. Hardy varieties with flowers of the brightest scarlet are common now, as are those with white, pink, rose and all the self-colors. Only dark flowers, with light centres, and white or pale flowers, with dark blotches, are wanting among the hardy varieties. These, especially the last, are exceedingly beautiful and showy, but they are, unfortunately, very shy bloomers, and produce their flowers very sparingly even when they are not transplanted, as they must be in this climate every autumn. Mr. R. T. Jackson exhibited sixty-seven varieties of the German Iris, many of great beauty; and there were several unusually large and attractive collections of wild flowers staged. The exhibition, owing to the advanced state of vegetation in eastern Massachusetts, was held one week earlier than usual.

Notes.

Along one of the boundaries of the Germantown Nurseries is a fine hedge of "*Elæagnus parvifolia.*" This plant endures cutting well, and makes a close, solid growth. When the plants are in bloom the hedge is very fragrant, and the boys find its fruit palatable.

On the nursery-grounds of Messrs. Hoopes, Brother & Thomas, near West Chester, Pennsylvania, stands an *Acer pictum* (sometimes called *Acer lætum* and *Acer Colchicum rubrum*), the trunk of which measures six feet three inches in circumference. The tree is about thirty-five feet high.

A charming combination of colors can be obtained by planting some of the varieties of the German Iris with pale blue flowers among plants of the Japanese *Azalea mollis.* They flower simultaneously, and a large bed arranged in this way, which recently came under our notice, was a refined and beautiful object.

Last week Mr. John MacElvery, of Flatbush, Long Island, sent to this city some fine spikes of the white variety of *Gladiolus Colevillei* which had bloomed in the open air after having received no special protection during the winter. The flower is delicate and graceful, and is largely grown in England by florists, who supply Covent Garden.

A correspondent, interested in Professor Goff's article on Muskmelons in a recent number, enquires how the vines can be saved from the attacks of the Squash-bug. To this Professor Goff replies: That if a tablespoonful of kerosene is stirred through two quarts of common land-plaster and the mixture is sprinkled on the vines, the effect will be good, although he cannot vouch for this as a sovereign remedy against this troublesome enemy.

The new Strawberry, known as the Pearl, is yielding a large crop of fruit, of very uniform size in some parts of southern New Jersey this year. The fruit is sharply conical and of excellent flavor. Colonel Pearson, of Vineland, and other large growers consider it most promising both for market and home use. Whether it will succeed on heavier soils remains to be seen. On the highly-manured lands of Bridgeton, a few miles away, it does not thrive as well.

Temple & Beard send us a specimen of a remarkable variegated-leaf form of the Sugar Maple which has been growing for several years in the yard of a house in New York, and which they have now transferred to the Shady Hill Nurseries. The whole blade of the leaf, with the exception of the principal veins and a few green blotches, is clear, bright yellow. If the yellow color is constant this will make an interesting addition to the list of abnormally colored trees—which many people consider beautiful.

In response to a request made in behalf of the West-End Improvement Association, the Torrey Botanical Club and the Park Commissioners of this city, Mr. Frederick Law Olmsted and Mr. J. B. Harrison, have prepared a paper upon the plantations of Central Park, with special reference to the alleged excessive thinning out of trees during the past winter. The report agrees with the views already expressed in this journal. Nothing was found to indicate that any of the cutting had been done without regard to the requirements of the Park design, but, on the contrary, evidences were apparent that a more liberal use of the axe is needed.

Mr. Carmen, of the *Rural New Yorker*, brought to his office, on Saturday, some flowers of a new Rose, which he obtained by crossing Harrison's Yellow upon *Rosa rugosa.* The flowers resemble those of General Jacqueminot closely in color, and they are very fragrant. The foliage is not quite as dark as that of *R. rugosa*, nor quite as leathery, but the leaflets are much larger. The plant seems to be as little liable to the attacks of insects and fungous diseases as its female parent. Mr. Carman assures us that the plant bloomed constantly through the summer last year, and altogether it seems to possess a combination of sterling qualities.

A committee has been appointed to receive contributions for a monument to be erected in memory of the late William Court, who for so long a time represented in this country the house of James Veitch & Sons. Mr. Court was widely known and highly esteemed here, not only among dealers but among buyers of Orchids and other choice plants. The monument, as designed by a London architect, will cost about $500, and all moneys above that amount will be disbursed for the benefit of Mr. Court's four orphan children. Contributions may be sent to Mr. Alfred Outram, of the firm of B. S. Williams & Co., London, or to any member of the American committee, which is constituted as follows: Robert Craig, Philadelphia, Chairman; A. D. Cowan, New York, Treasurer; Peter Henderson, New York; Wm. Elliott, New York; John Thorpe, Pearl River, New York; Wm. Gray, Albany, New York; John N. May, Summit, New Jersey; Robert Halliday, Baltimore; W. R. Smith, Washington; Wm. Robinson, North Easton, Massachusetts; David Allan, Mt. Auburn, Massachusetts.

A correspondent of *The Garden* (London) writes that he has preserved all the plant and flower catalogues which have been sent him during a period of forty years, and that they now supply much interesting information with regard to changes in taste and in commercial enterprise. Their lists, we are told, offer "hosts of beautiful and most interesting things never heard of now, and most likely very many lost to cultivation. One list offers: Acacia, 59 species; Berberis, 15; Canna, 57; Chorozema, 10; Genista, 14; stove and greenhouse Hibiscus, 9; . . . ornamental fruit-bearing Solanums, 23; . . . Kennedyas, Hardenbergias and Zichyas, 25; ornamental Gourds and other cucurbitaceous plants, 117; and so on. Where are the seedsmen now that can offer us anything approaching this? . . . Why do not some of our great nurserymen, instead of ransacking the furthermost corners of the earth for some new orchid, or seedsmen, instead of giving us the everlasting Cineraria, Calceolaria, Primula and such like, . . . re-introduce some of the multitude of beautiful and interesting plants cultivated in the last generation? They would be novelties to-day."

"A plan is on foot," says a correspondent of a New York daily paper, "to make an addition to Chicago's Lake Shore Drive, which, if carried out, will give this city one of the finest and most extensive systems of boulevards and drives in the world. The present idea is to extend the beautiful drive which runs along the lake, through the handsomest portion of the North Side and through Lincoln Park. This drive now stops at the north end of the park. The new plan, which is well under way, is to extend it as far north as Lake Bluff, twenty-five miles north of Chicago. This section of country is by far the prettiest in this neighborhood. The flat shores of Lake Michigan gradually slope upward until at Lake Bluff they assume the shape of almost perpendicular banks, rising to a height of 100 feet, and showing the waters of the lake far below. A heavy growth of timber stretches toward the west, while at other places it is broken by deep ravines that open up unexpected glimpses of the lake through the dark foliage. The new drive will run along as close to the lake as possible, and through the villages of Evanston, Highland Park, the new military post, Fort Sheridan, and Lake Forest.

Accounts of the opening of the Paris Exhibition prove that it will be of great interest to horticulturists and lovers of the art of gardening. The gardens of the Hôtel des Invalides contain the products of the French colonies and of the several Ministries. Along the Quai d'Orsay are the halls of agriculture and viticulture, the fisheries and the general food products, while the great Trocadero gardens are given up to fruits and flowers, grown under glass and in the open air. The whole of the Champs de Mars, formerly nothing but a dusty desert, is transformed into a charming park, with verdant lawns, shady paths, masses of shrubbery and multitudinous flower-beds. The plans were traced more than two years ago by Monsieur Alphand, Director of Public Works, and were mapped out on the site itself. Trees and shrubs were then set out and sods were laid, and the place now looks like a park of many years' standing. A good deal of injury was done by the crowds that attended the opening ceremonies, even the energetic *gendarmerie* of Paris being unable to control so vast a multitude. Scores of blooming flower-beds were trampled into mire, and many shrubberies and lawns were seriously injured; but the damage was being repaired, and in a few weeks no trace of it will appear.